From: Dave Larsen <dlarsen@reiengineering.com>
Sent: Monday, July 01, 2019 6:30 PM
To: Stoltz, Carrie R - DNR
Subject: Tower Case Closure Submittal #7
Attachments: Attachments.html

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Expires December 28, 2019

903 Tower Closure Submittal (7-1-19).pdf 86.2 MB

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Carrie, I just wanted to provide a bit of my insight to this project. I am making the argument that there are more than 1 contaminant sources and that the contamination on the neighboring property is not from Tower Standard's known release.

Maybe a bit of site history is needed:
The original Tower gas station, repair shop and restaurant was located on the NE intersection of 70 and D. Bill Yesheck owned the original location. Per Bill Kozak, Yesheck had poor water volume on the NE corner and installed a new well on his new gas station property south of 70 (current Tower Standard location) and had great water yield. He then plumbed water across 70 to the restaurant. When original restaurant burned, Yesheck built new restaurant east of Tower Standard. For many years the original Tower Standard potable well provided water to the gas station and the restaurant. When Kozaks bought Tower in 1978, Tower Standard was still providing water to the restaurant. In 1980 Kozaks forced the restaurant to install their own well. The restaurant was apparently a big deal and used a lot of water. It was initially thought that the joint well use was a cause for the strong downward gradient and impact to the neighboring potable wells.

There were 3 standalone BRRTS numbers for the restaurant property (14257 State Highway 70 west). One of the releases was specific to the removal of 2 fuel oil UST's in July 1993. One of the UST's had 20 holes in it (refer to Drake report from 9-30-96). They also had another BRRTS number for petroleum in the basement of the restaurant following heavy rains (Sept 1994). Per Linda Kozak, WDNR had given permission to pump impacted water from the basement into the yard. The source of the petroleum was not identified, but it was over a year after the fuel oil UST's were removed.

Drake had advanced boring B-4 near western property line by Tower tanks and had impacts. From my perspective the soil samples from B-4 were collected below the water table. We do have samples from GP4 to GP15 to Drake B-4 (see attachment for approximate boring locations) and the concentrations were greater to the east – away from the UST's.

I also provided a direct comparison of historic investigation results to current investigation results and the contaminant concentrations in the groundwater were significantly higher in the current investigation (2016) at MW20 than the entire historic investigation from 1997 to 2005. Additionally, elevated lead and EDB concentrations were detected under the neighboring former supper club property and minimal MTBE was reported. Conditions were just the opposite at Tower, where lead and EDB were low to no detect and MTBE was prevalent.

MTBE – MTBE was prevalent in initial the investigation and was less than detection limits in the re-opened investigation in the groundwater monitoring wells.

MIP logs. The MIP logs tell a story on the soil impacts above the shallow depth to groundwater (logs provided in MIP report). Review the MIP logs and pay close attention to MiHPT02. Additionally review closure submittal Figures B.4.c.22-29, which are model snips rotating around MiHPT02. This appears to show a significant petroleum source in the soil above the water table. The impact appears to start at the surface and extend to the water table and may be evidence of a past spill.

MIP Logs. Hydraulic conductivity was also measured during the MIP scope. Please refer to closure submittal Figures B.4.c.30-49. Starting at B.4.c.30 you can see the red outline of a very conductive zone beneath Tower Standard. This may be the paleo-channel that had historically been discussed as an explanation to the strong downward gradient and presence of round cobbles and coarse sand. Surrounding soils are much less conductive and it almost seems that a low conductive zone exists between the former Tower tank bed and the MW20 well nest on the neighboring property. Numerous model snips were included to document hydraulic conductivity output as the view is being rotated.

Another point of observation was at MW9 (historic investigation) results following system shutdown vs MW19@35-40' (current investigation). Both wells are screened across a similar depth and both wells are installed relatively close to each other. Following system shutdown MW9 concentrations didn't show signs of a significant rebound. For that matter, none of the wells in the former Tower Standard initial investigation showed signs of a potential rebound (refer to the initial investigation closure packet I emailed previously).

Review the piezometric contour maps from the previous investigation and the re-opened investigation. They show groundwater at depth flowing from the east to the west (on the east side of the Tower UST bed) and from west to east on the west side of the Tower UST bed. This again aligns with the pale-channel hypothesis.

If Tower Standard was the source of the contamination beneath the neighboring property:

- The analytical signatures should be the same – in this case they are not.
- There should be a strong hydraulic connection to move the contamination upgradient from the Tower Standard UST basin. The strong hydraulic connection appears to be a paleo-channel that is channeling groundwater into and beneath Tower Standard (natural downward gradient) and discharging south of Tower Standard below Haskell Lake.
- It would be hard to explain how a release at Tower Standard resulted in soil impacts observed at MiHPT02.
- Either we did a great job remediating the MTBE the first time or MTBE mobility and a strong hydraulic gradient into a highly conductive zone flushed the MTBE away from the existing well network. If the later is true, which it appears to be, any release from the Tower Standard UST system should be following the MTBE release path and migrating vertically downward and

south towards Haskell Lake. This would also explain the MTBE and benzene detection at the motel drinking water well. The original well was installed as a pounded point and was replaced by a drilled well (PW#2) to about 35' along the SE building corner (refer to Figure C.6.4). That well was impacted and another replacement well (PW#3) was drilled next to PW#2 but drilled to a depth of about 75' and it too became impacted (refer to initial investigation closure documents for specifics). Eventually the next replacement well (current well) was installed north of the motel near Hwy 70. This well was drilled to a depth of 38'.

- Pages 14-15 of the REI Phase II Report (May 1999) discusses measured hydraulic conductivity at the Grizzly Bills investigation (immediately north and east of Tower Standard). A slug test and soil boring logs document low conductivity soils. Additionally, potable well drawdowns were documented for neighboring wells.

Additionally, when REI was conducting the initial investigation the property owners (Jerry and Joan Uran) would not allow us to drill on their property. They sent their son Todd out to observe our work to ensure we never accessed their property. The only well/boring we installed on their property was MW5 and that was a challenge. The upgradient well/piezometer nest (MW6, MW7) had to be installed in DOT r-o-w as they would not allow access to install on their property.

Hope this helps

Thank you,

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